

Notice of Allowability

Application No.

10/752,870

Examiner

Henry S. Hu

Applicant(s)

KOJIMA ET AL.

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment of September 15, 2006.
2. ☒ The allowed claim(s) is/are 1,2,8,11,17 and 26.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

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1. This application is in condition for allowance except for the presence of **Claims 3-4, 6-7, 9-10, 12-13, 15-16, 18-19, 21-22 and 24-25 (Group II)**, which are **non-elected without traverse** as filed on April 21, 2006 (confirmed on April 25, 2006). Accordingly, Claims 3-4, 6-7, 9-10, 12-13, 15-16, 18-19, 21-22 and 24-25 have been cancelled. An action follows.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The examiner has cancelled the above-mentioned **Claims 3-4, 6-7, 9-10, 12-13, 15-16, 18-19, 21-22 and 24-25**, which are **non-elected without traverse** by Attorney Michael S. Gzybowski (registration # 32,816) on April 21, 2006 (confirmed on April 25, 2006).

Claims 3-4, 6-7, 9-10, 12-13, 15-16, 18-19, 21-22 and 24-25 are cancelled.

DETAILED ACTION

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3. Applicants' **Amendment** filed on September 15, 2006 in response to the Non-Final office of June 15, 2006 was received. **Claims 1-2, 8, 11 and 17 were amended; Claims 5,14, 20 and 23 were cancelled, while new dependent Claim 26 was added.** To be more specific, parent **Claim 1 was amended to incorporate all the limitations from Claims 5, 14, 20 and 23** as "such a composition is for use as a molding material for fuel cell stack gaskets or hard disc driving gaskets" as well as "organic peroxide and a polyfunctional unsaturated compound are included in the composition".

With above Examiner's amendment, all non-elected **Claims 3-4, 6-7, 9-10, 12-13, 15-16, 18-19, 21-22 and 24-25 (Group II)** were cancelled. **Claims 1-2, 8, 11, 17 and 26 are now pending** with only one independent claim (**Claim 1**). An action follows.

4. Claim rejections in previous Non-Final Office Action filed on June 15, 2006 are now removed for the reasons given in paragraphs 5-11 thereafter.

Allowable Subject Matter

5. Claims 1-2, 8, 11, 17 and 26 are allowed.

6. The following is an examiner's statement of reasons for allowance: The above Claims 1-2, 8, 11, 17 and 26 are allowed over the closest references:

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7. The limitation of parent **Claim 1** in present invention relates to **a fluoroelastomer composition** for use as a molding material for fuel cell stack gaskets or hard disc driving gaskets which comprises: (A) 100 parts by weight of **vinylidene fluoride-perfluoro(methyl vinyl ether)-tetrafluoroethylene terpolymer**, (B) 10 to 50 parts by weight of **liquid fluoroelastomer** having a viscosity of 500-3,000 cps at 100 °C, (C) 0.5 to 5 parts by weight of **an organic peroxide**, and (D) 0.5 to 10 parts by weight of **a polyfunctional unsaturated compound**. See other limitations of dependent **Claims 2, 8, 11, 17 and 26**.

8. Applicant has claimed in parent **Claim 1** in this Amendment an unexpected way of obtaining a crosslinkable fluoroelastomer composition with **liquid fluoroelastimer being only present as a plasticizer**. The key point is that **Claim 1** has been amended to incorporate all the limitations from **Claims 5, 14, 20 and 23** as “such a composition is for use as a molding material for fuel cell stack gaskets or hard disc driving gaskets” as well as “organic peroxide and a polyfunctional unsaturated compound are now included in the composition”. It is noted that the original composition comprises two polymers. For instance, **a terpolymer of vinylidene fluoride-perfluoro(methyl vinyl ether)-tetrafluoro-ethylene and a liquid fluoroelastomer** (having a viscosity of 500-3,000 cps at 100 °C).

9. With respect to two 102 and/or 103 rejections, the sole or main rely on Hochgesang cannot stand with current limitation on four-component composition as follows: **Hochgesang** only discloses that **a fluoroelastomer composition** comprises two different sub-compositions as follows: one is a peroxide-curable **solid fluoroelastomer** (using the claimed **terpolymer of TFE**

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(1-96 wt%) /VDF (2-97 wt%) /PMVE (1-96 wt%)) along with its peroxide curative agent, and the other one is a bisphenol-curable **“liquid” fluoroelastomer** (paragraphs 28-31, which is the same as or similar to the liquid fluoroelastomer with claimed viscosity used by instant application on **pages 4-5**) along with its bisphenol curative agent.

In a close examination on Applicants' argument on page 9 bottom to page 10 top of Remarks, **the liquid fluoroelastomer component in instant application is thereby NOT crosslinked since Hochgesang's bisphenol curative agent is NOT added.** As Applicants have alleged on page 9, **liquid fluoroelastimer is therefore only present as a plasticizer** so as to produce some unique and/or unexpected performance properties as shown on pages **10-11** of Remarks. In case that liquid fluoroelastomer may be crosslinked by organic peroxide curative agent, the resultant degree of crosslinking will still not be exactly the same when bisphenol curative agent is added. Additionally, instant parent Claim 1 also requires using a polyfunctional unsaturated compound in the composition.

10. Having mixed a blend of the claimed terpolymer with the claimed liquid fluoroelastomer does not necessarily provide the availability to make the claimed properties in dependent claims. The issue of “inherent property” for use as a molding material for fuel cell stack gaskets or hard disc driving gaskets cannot be applied. Other reference **Duane** only discloses **a method of making coaxial cable** from two options. For instance, it can be from a fluorinated composition of (A) a solid fluropolymer such as polytetrafluoroethylene and (B) a compatible liquid polymeric fluoroelastomer such as copolymer TFE/VDF. The claimed

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terpolymer and organic peroxide are both NOT used. Therefore, Duane cannot fix the deficiency of Hochgesang.

It is well known in the art that a composition with **such a combination of four components is quite different from the compositions cited by references**. It is also known in the art that even the difference is only one carbon atom in the composition or a tiny extra step in the making, the final polymeric products can be with very much different properties. Additionally, the present invention has already shown **unexpected results** in examples along with some control examples for making such a crosslinkable fluoroelastomer composition (see pages 8-15 for **examples 1-14 with control examples 1-10 and Tables 1-2**). Therefore, all the above-mentioned references, in combination or alone, does not teach or fairly suggest the limitations of present invention.

11. After further examination and search, the examiner found the following prior art did not teach the claimed limitation:

USPG-PUB 2004/0037967 A1 to Feiring et al. only discloses a coating system useful for plastic substrate. Such a coating system may be consisted of **the claimed terpolymer VDF/TFE/PMVE** (abstract, line 1-4; paragraphs 3-5). However, **“liquid” fluoroelastomer is NOT is disclosed or suggested for blending together**. Additionally, the claimed organic peroxide and the polyfunctional unsaturated compound both are NOT added. Therefore, Feiring fails to teach or fairly suggest the fluoroelastomer composition of present invention.

US 6,864,336 B2 to Kaspar et al. only discloses the preparation of some compositions by using a tetrapolymer of TFE, VDF, PMVE and a perfluorinated vinyl ether of $\text{CF}_2=\text{CF}-\text{OCF}_2\text{CF}_2\text{CF}_2-\text{OCF}_3$ (abstract, line 1-7; see working examples for making compositions). It is not the claimed terpolymer of TFE/VDF/PMVE. Additionally, the claimed organic peroxide and the polyfunctional unsaturated compound both are NOT added. Therefore, Kaspar fails to teach or fairly suggest the fluoroelastomer composition of present invention.

12. The key issue on making a crosslinkable fluoroelastomer composition by adding a mixture of organic peroxide and polyfunctional unsaturated compound to a blend of a terpolymer of vinylidene fluoride-perfluoro(methyl vinyl ether)-tetrafluoro-ethylene and a liquid fluoroelastomer so that liquid fluoroelastimer is only present as a plasticizer, cannot be overcome by any or the combination of the above references, therefore, the present invention is novel.


13. As of the date of this office action, the examiner has not located or identified any reference that can be used singularly or in combination with another reference including the above references to render the present invention anticipated or obvious to one of the ordinary skill in the art. Therefore, the one independent **Claim 1** is allowed for the reason listed above. Since the prior art of record fails to teach the present invention, the remaining pending dependent **Claims 2, 8, 11, 17 and 26** are passed to issue.

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14. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu** whose telephone number is **(571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Henry S. Hu

Patent Examiner, art unit 1713, USPTO

November 13, 2006


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PRIMARY EXAMINER